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Malta, Tiago Alexandre Matias da Veiga; Feekings, Jordan P.; Herrmann, Bent; Krag, Ludvig Ahm

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Optimizing data collection processes for industry collected gear selectivity data

Malta, T., Feekings, J., Herrmann, B. and Krag, L. A.

Improving fishing gear selectivity to avoid catching unwanted fish has gained increasing importance under the new European Common Fisheries Policy. Scientific sea trials on board research or commercial fishing vessels are the traditional way of testing new gear. However, such trials are expensive, time consuming, and labour intensive. One way to reduce the economic and time outlay is to actively involve fishermen in the gear testing and data collection processes. Furthermore, this practice is a good example where experience-based knowledge from the fishermen can be very useful and fully integrated throughout the study. The use of industry collected data is a cost effective solution since it reduces the need for scientific staff on board and allows for a gear developmental period where promising solutions can be tested and modified in a commercial setting before carrying out a rigorous scientific test. On the other hand, the extra workload for the fishermen can be excessive and thus compromise the quality of the collected data. Therefore, optimizing data collection processes becomes an important step before industry-led gear selectivity trials since it aims to avoid the collection of unnecessary data. Through the use of stochastic simulations, this study aims to optimize the industry data collection process by determining the minimum number of fish needing to be sampled during commercial fishing to maintain the necessary data quality. The quality of the data will be evaluated in terms of catch comparisons and ratios, and associated uncertainties. Analyses will be performed using the statistical software SELNET.

Keywords: selectivity, industry collected data, catch comparison, stochastic simulations

Contact author: Tiago Malta, Danish Technical University – DTU-Aqua, timat@aqu.dtu.dk